

Research article

Trees are all around us: Farmers' management of wood pastures in the light of a controversial policy

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ARTICLE INFO

Article history:

Received 6 December 2016

Received in revised form

22 January 2018

Accepted 1 February 2018

Available online 22 February 2018

Keywords:

Policy

European Union

Decision-making

Relational values

Trees

ABSTRACT

Wood pastures are some of the most species-rich environments found in Europe and therefore essential habitats for biodiversity conservation. Society also puts faith in multiple values of trees, ranging from climate change mitigation to socio-cultural traditions. Therefore, the seemingly arbitrary tree density limit for pasture environments imposed by the EU through its Common Agricultural Policy (CAP) threatened both biological and societal values. In this study on farmers' perspectives, we target the effects of the CAP tree density limit on management of wood pastures in a low-intensively managed agricultural landscape of southern Sweden. The case of simplifying nature by using simple number limitations was used as an entry point in semi-structured, open-ended, interviews with farmers and officials about their view on trees and pasture management in relation to policy directives. The interviews showed that the policy incentive shifted the management focus from grazing quality to the number of trees and that farmers are willing to cut in order to get subsidies and timber revenues, however not unreflectingly. Farmers had high knowledge about the wide ranging social, cultural and natural values of trees, and are often themselves as good regulators of tree management as policies intend to be. Our study reveals many difficulties in managing the complex relations within landscapes with simplified legal measures, opening up for further discussion about improving policy instruments to preserve both social and biological values of wood pastures. However, although the tree density limit has been criticised on many points related to biodiversity conservation, this study shows that other values linked to pasture trees, e.g. the aesthetic values and their importance as shelter for grazing animals, could be an argument to actually keep the focus on trees as indicators of pasture management quality. We suggest that trees in general and wood-pastures in particular therefore are good starting points, or boundary-objects, for collaboration between production and conservation interests of farming and environmental management.

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1. Introduction

Throughout the world, trees on farmland are acknowledged as important pathways for sustainability through benefits such as food and fibre, aesthetic values, mitigation of climate change and biodiversity (Jerneck and Olsson, 2013; Peterson, 2005; Plieninger et al., 2012). Trees are also part of many people's livelihood, providing firewood, timber, fodder and material for fencing, although many of these functions have become obsolete or made invisible to European farmers. Hence, trees can be seen as living

monuments of long-term and changing human influence in the landscape (Butler, 2014; Jones and Cloke, 2002).

Within agricultural policy, one of the major challenges for sustainability is how to shift a strong production-oriented farming into more diverse land use practices to support biodiversity values (Burton, 2004; Burton et al., 2008; McGill et al., 2015; Riley, 2011; Saunders, 2015). However, from a policy perspective, the question of how to handle trees is challenging given the compartmentalised model of governing land use in Europe. Agriculture and forestry have during the 19th and 20th centuries developed into two distinct land use categories guided by separated entourage of governing bodies, research, management rationales etc. (Hartel and Plieninger, 2014; Stenseke et al., 2016), where agricultural policy falls under the competence of EU and forest policy mainly falls

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under the national governance. In this process, trees are turned into timber volumes within forestry, whereas on the other side of the administrative ‘fence’ we find the intensively used (tree-lees) farmland as the norm within the Common Agricultural Policy (CAP). This entails that farmers, although they happen to own and manage trees on both farmland and in forests, usually are approached in their role as either a farmer or a forest owner by researchers as well as the compartmentalised administration.

In this context, wood pastures have become trapped in the dichotomy between agriculture and forestry (Bieling and Konold, 2014; Beaufoy, 2014; Roellig et al., 2016). Wood pastures are some of the most species-rich habitats found in Europe, but their social-ecological environments have been poorly acknowledged in a policy perspective, when trying to fit the heterogeneity of European landscapes into clear-cut policy categories (cf. Dahlberg, 2015). Considering the strivings for multifunctionality within the CAP (Wilson, 2009), it is paradoxical that the EU in 2007 imposed a tree density rule of a maximum of 50 trees/ha that encouraged farmers to cut down trees in pastures in order to be granted subsidies (Beaufoy, 2014). This rule changed in 2014 to allow subsidies for pastures with up to 100 trees/ha (European Commission, 2014). However, changes in terms of abandonment and tree cutting practices have already happened in many pastures (Hartel and Plieninger, 2014), and further changes to other arbitrary limits do not seem to be the solution for the conservation of the social-ecological values of wood pastures. In Sweden, the number of appliances for subsidies for pasture management dropped after the tree-density limits was inaugurated, and the removal of giant/dead trees and loss of structural variation of trees (age/size distribution) have had negative biological impacts and resulted in more uniform pastures in line with the configuration of trees in production forests (Swedish Board of Agriculture, 2010).

Due to the high biodiversity values of wood pastures in Europe, it is important to consider the precision of tree density rules from the perspective of biodiversity values. Besides being a rough indicator of abandonment of grazing, tree density may seem a logical limiting factor for biodiversity as trees are expected to have negative impact on plant diversity due to reduced light availability and increased competition (Abdallah and Chaieb, 2012; Grime, 2006). However, as low intensive management continuity is a major driver of grassland plant diversity (Aavik et al., 2008; Cousins and Eriksson, 2002) and trees themselves form important features of high biological values in wood pastures (Hartel and Plieninger, 2014; Plieninger et al., 2015) the logic behind the tree density rule may be questioned from a biodiversity point of view. The value of sun exposed trees in semi-open grasslands for beetles, lichens and fungi is well recognised (Plieninger et al., 2015). Importantly, recent studies on biodiversity patterns in relation to trees within our study area in southern Sweden have shown consistently positive effects of increasing tree density also on species richness of plants, birds and bats (Jakobsson and Lindborg, 2015, 2017; Wood et al., 2017). Given the emphasis within the CAP on environmental values, these results generate a pedagogical challenge for the officials who need to implement a tree density focused policy that might lead to negative effects on biodiversity.

While landscape management in the higher administrative domains is guided by *statistics* on social, economic and ecological facts, what happens among the farmers and other actors on the ground is better understood as *logistics* (Hägerstrand, 2001). Hägerstrand (2001) asserts that there is a wide gap between those who possess scientific evidence and formulate management goals “from a bird’s-eye view of the world, and those who deal with the material realm within their reach”. On-the-ground, we also find biological communities that lack the ability to read maps or directly adhering to shifts in policy, resulting in difficulties to interpret

biological data of landscapes and habitats experiencing structural or compositional changes (Kuussaari et al., 2009). There is therefore urgent need for addressing the gap between scientific evidence and policy making (Geijzendorffer et al., 2015) by linking ecological evidence, policy recommendations and farmers’ perspective to improve the relationship between different actors involved in the development of agri-environmental policy (Rands et al., 2010; Rose, 2015).

Our main concern in this paper is how farmers, who also are forest owners, manage trees on wood-pastures in the light of the “policy-trap” between the agriculture and forestry sector. From a policy perspective, clear categorical boundaries (e.g. between forest and farmland) are needed in order to sort out who is responsible for what type of land use, but such boundaries tend to simplify nature (cf. Scott, 1998). Therefore, research exploring how boundary-making is perceived and negotiated among those involved in converting words, numbers and pictures into actions on-the-ground is needed (Dahlberg, 2015). In this paper, we aim to respond to the need for improved understanding of policy, farming activities and biodiversity by providing insights from wood pastures in southern Sweden. The tendency of simplifying nature is used as an entry point when talking with farmers about their management, views and lived experience of pastures trees and how they respond, adapt and resist to the seemingly contradictory signals coming from subsidy regulation regarding the role of trees in EU policy. By putting farmers and trees in the centre of analysis we open up for discussion on how agriculture policy rationales are filtered by the hands and minds of individual farmers in their daily management of wood-pastures (Ahnström et al., 2010; Hägerstrand, 2001; Stobbelaar et al., 2009; van Vliet et al., 2015). The following questions have guided this study:

- What values do farmers assign to the trees in pastures?
- Which species of trees, and why, are cut and which are spared and how are the trees distributed in the pastures?
- How do official guidelines and EU-subsidy regulations influence farmer’s management decisions and value regarding pasture trees?

2. Material and methods

2.1. Study area

Our case study area east of Lake Vättern in southern Sweden is located south of one of the larger agricultural plains and has traditionally been dominated by dairy production. The area is characterised by a mosaic of different land uses: arable land in the valleys, wood- and other forms of semi-natural pastures (Fig. 1) on the slopes and protected forests as well as production forests on higher levels of the landscape. The hilly structure of the landscape has in many cases forced relatively small scale farming practices to persist. Small pastures are still used, which makes farmers move their animals between these patches several times per year. Also the ploughed crop fields are in some cases still found in remote places in the middle of forests, a sight rarely seen in areas of more intensive crop production (e.g. the plains of central and southern Sweden). In 2012, the study area was designated a UNESCO Biosphere Reserve. Interestingly, the start of the process underlying the creation of this reserve was mainly driven by conflict between land-owners, authorities and local conservation groups regarding turning the forest along the hills of Lake Vättern into nature reserves. Today, the awareness and pride of the socio-ecological values in the area seem to be relatively high among the people living there (Jonegård, 2007; Olsson, 2012). Nevertheless, the



Fig. 1. Four examples of woody pastures within the study area in southern Sweden. Photo: Simon Jakobsson.

farmland structure and ownership of land is changing in the area; already larger (dairy) farms are expanding while small-holders sell their animals (or convert their dairy production to raising beef cattle) and rent their farmland to farmers expanding their business.

2.2. Interviews with farmers and officials

To address questions of everyday pasture-management and how trees in pastures are valued we conducted semi-structured interviews with 22 farmers (representing 17 different farms). The farmers were selected because they own/manage at least one of the pastures that we previously had inventoried for plant diversity (64 pastures on 43 different farms). All farmers in the study own land with “special values” and this is a common feature of the pastures in the studied area. Special values entitle higher subsidy revenues and a greater freedom to keep trees (max 100 trees per hectare) compared to pastures having “common values”. Although our sample of farmers is relatively small, it is representative of the array of different farming systems in the area. The selection of farms ranges from small “leisure farms” to large enterprises that recently invested in milk robots. The farmers themselves range from retired farmers to those recently overtaking the family farm and from full time farmers producing dairy to those producing meat and who has the possibility to work full time off the farm.

Interviews were carried out face-to-face at the farms, except for one interview that was made over telephone. Table 1 in Supplementary material provides an overview of the interviewed farmers, size of the farm, pastures and number of animals. The interviews were recorded, transcribed and analysed using NVivo software for qualitative analysis where the text was coded into themes, following the themes that guided the interviews (see Table 2 in Supplementary material). The farmers were asked questions from a semi-

structured interview guide. The guide was structured around the following themes: farmers background, general conditions for farming, management of wood pastures, how farmers value and manage (different) pasture trees, their interest in species/conservation, how the CAP and subsidies in general and the tree-density limits in particular affect their management strategies, their engagement in local development and the biosphere organisation and finally also how the view the future of farming in the area. As all farmers also own forest, they were asked questions about similarities and differences between how they handle trees in forests and on wood pastures. When it was possible, depending on daylight and farmers time constraints, we asked them to guide us in the pastures.

Farmers' perspectives on tree density limits and its effects on the management of trees were complemented with interviews with two officials at the County Administrative Board who works with counselling and handling applications for subsidies. They provided insights from farmers' perspectives on pasture management as well as how the norms guiding the subsidy system and advices to farmers have changed over time. We also interviewed an official at the Swedish Board of Agriculture working with the negotiations and adaptation of Swedish agriculture policy in relation to CAP.

2.3. Structure and species composition of wood pastures

To put the results from the interviews with the farmers into perspective regarding the trees present in the pastures, we used data from Jakobsson and Lindborg (2015) on tree and shrub communities in the woody pastures. Data were from 64 wood pastures, ranging from 3 to 214 trees per hectare to cover a complete tree density gradient (Jakobsson and Lindborg, 2015), of which many are

owned and/or managed by the interviewed respondents. In 2013, tree communities were recorded by identifying and measuring (diameter at breast height; DBH) all individual trees within a subset of 0.8–1.4 ha of each pasture. For details on the sampling methodology, see Jakobsson and Lindborg (2015). Tree communities in the pastures were summarised and visually analysed using histograms of the size (DBH) distributions and species compositions of the studied wood pastures. No attempt was made to combine the tree data with the interview data quantitatively, but these data are used to discuss the presence of tree species and tree sizes in the pastures in relation to farmers' view on trees and tree management.

3. Results

3.1. Interviews with farmers and officials

Of the 22 interviewed farmers, 17 were men and five were women. With one exception it is the man who has the main responsibility for pasture management and contact with authorities regarding subsidies, felling trees (also goes for the forest) and looking after fences. The farm size ranges from 25 ha (including forest and grazing land rented by larger enterprises) with 20–30 animals to 400 ha and several hundred animals. The largest farms, with one exception, were producing dairy, and the others mainly produced meat but also received revenues from selling forest products. All farmers, excepting the two who run the largest enterprises and one smaller dairy producer, also have off-farm employment. In general, all households rely on off-farm income, and all women in the households have full-time off farm employment. The farmers sometimes had difficulties to provide details of exact amount of pastures that were considered “common” and “special values” due to the complexity and changes of the subsidy system as well as the mosaic character of the landscape (particularly highlighted by the farmers during the walks on their estates).

The results from our interviews show that rules focusing on the number of pasture trees and their distribution clearly put the trees in the spotlight, e.g. was the exact number of pasture trees not considered before, neither by farmers nor the officials. Both farmers and the interviewed officials at the County Administrative Board mentioned that it is this kind of swift change in policy that put constraints to their relationship and trust. When the tree density limit was introduced there was little time for the officials to inform farmers regarding what were supposed to happen and why, potentially leading to further abandonment as a result. The official working at the Swedish Board of Agriculture was at first glance highly critical to the process where Sweden and other member countries were forced to set limits on the number of trees in pastures. However, later during the interview the official shifted the perspective somewhat while stating that overgrowth and a low grazing pressure is the biggest threat to the different values associated with pastures.

The overall impression from the interviewed farmers is that the tree rules neither caused too much upset nor interfered significantly with how handled and valued pasture trees. First and foremost, the farmers value the pasture trees for their beauty. The trees were seen as a traditional feature in the pastures and none of the farmers would consider clear-cutting in order to maximise grass production. If hesitant on how to handle the number of trees; most farmers in this study would rather take the trees out of the subsidy application than out of the pastures (at least regarding smaller patches). One farmer (a part-time farmer raising beef cattle) declared that “I’ve been clearing pasture my whole life” (R6). He made this statement to underscore that keeping the pastures semi-open is not only a policy-driven measure for the sake of conservation, but rather an imbedded practice of being a farmer in this

area. On the same note, another farmer (full-time farmer producing dairy) stated that he was mocked by his neighbours for turning one of his pastures into somewhat of a “desert” after clearing some (not all) trees. Some farmers even state that managing wood pastures and the highly visible results of clearing pasture trees and shrubs in order to keep wood-pastures (semi-)open is one of the major driving forces to keep on farming. The statement beneath was made by one of the dairy producers. The mosaic character of the landscape and difficulties of finding pastures to buy/rent close to the farm meant that he has to move cattle between smaller pasture patches during summer months. Despite the high work-load of moving animals he still stated that:

“I rarely count if a certain measure gives [monetary] returns when it comes to getting a nice landscape. Often, my interest in maintaining it [the landscape] in a certain condition takes over (R8).”

The pasture trees were also recognised for providing shelter for cows and sheep (e.g. R21), cherries for the grandchildren (e.g. R1 and R2), shadowing dry and sunny parts of the pastures and taking up water where it is wet (e.g. R4). The interviewed farmers are generally knowledgeable and experienced when it comes to pasture trees, recognising both their ecological values and their monetary values. However, we found no straightforward explanation to why the interviewed farmers highlighted their appreciation for oaks, although the high biodiversity values linked to giant/old oaks are well known among the farmers. In addition, several farmers save “odd trees” (e.g. R1 and R17) in the pastures, such as Swedish whitebeam (*Sorbus intermedia*), rowan (*Sorbus aucuparia*) and other flowering trees, while felling the common ones such as birch and aspen. There were also examples of how odd trees, such as a single oak, were cared for in the production forest. On the wood pasture, a single old-grown spruce may be saved, despite the fact spruces generally are not regarded as traditional pasture trees among farmers. An important reason to save one or two spruces is that they are often used by the grazing animals for weather protection (so called “cow-spruces”). The shelter argument is an important reason for farmers to keep trees even when it means that they cannot apply for subsidies for that piece of tree-rich area. Within the 64 pastures studied, birch (*Betula pendula*) and oak (*Quercus robur*) dominate, making up on average 38% and 25% of the tree communities, respectively. Hence, other trees, of which many belong to the above-mentioned “odd” trees, make up on average 37% of the tree communities within the pastures (Fig. 2). These odd trees also contribute substantially to the proportion of large old trees, where e.g. more than 10% of the Norway spruce (*Picea abies*), pine (*Pinus sylvestris*) and lime (*Tilia cordata*) trees have a DBH >50 cm, similar to the proportion of oaks being that big (Fig. 3).

Although our study area is recognised for having a large amount of pollarded trees, it was only one farmer (R20: the youngest) who actively pollards (mainly ash (*Fraxinus excelsior*)). The pollarding was done in order to create an interesting appearance of the trees, and the leaves were not used for fodder. Actually, none of farmers who had tried pollarding stressed the role of the pollarded trees for animal fodder or in order to provide habitats for birds and insects. Instead, the “fun” of pollarding and the beauty, appreciated by the farmers themselves and their neighbours, were the main motivations. Several farmers stressed the importance of visitors (officials, neighbours, visitors) expressing that kind of appreciation. In Sweden, the public has outspoken rights to access and pass through privately owned land, including fenced pastures, but no problems were asserted with this “Right of Public Access” (Sw: “*allmansrätt*”). On the contrary, visitors, often with a particular interest

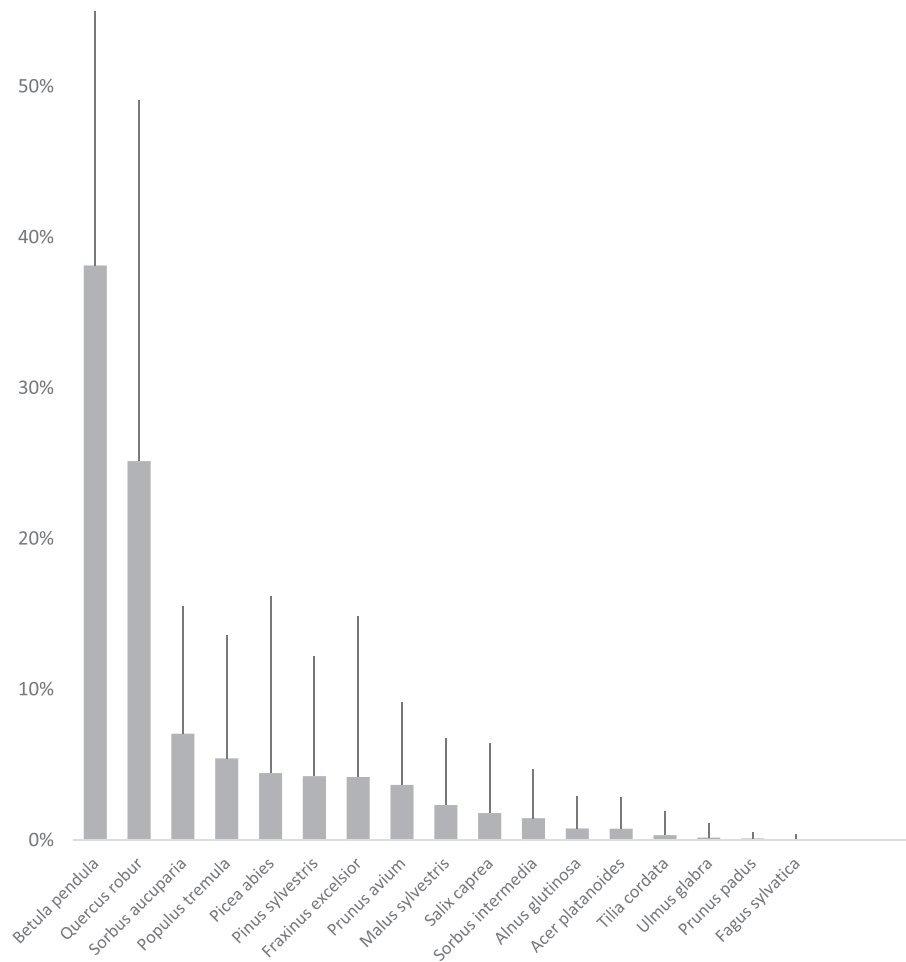


Fig. 2. Mean (filled bars) and standard deviation (error bars) of the number of trees with DBH >10 cm for the 17 tree species found (with DBH >10 cm) in the 64 studied wood pastures.

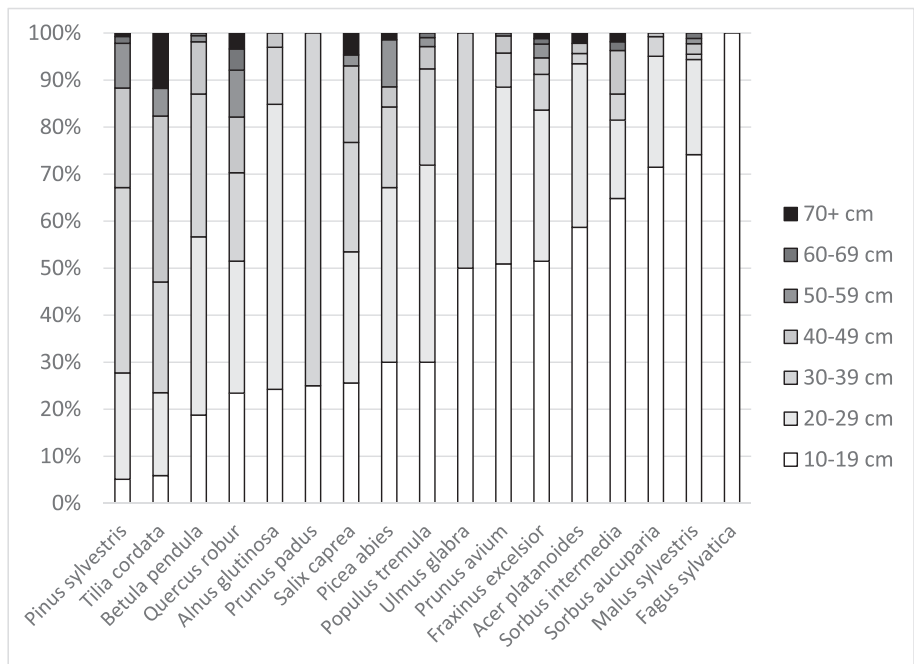


Fig. 3. Size distribution among trees with DBH >10 cm for each species within all 64 studied wood pastures together.

in the values of wood pastures, were seen as a token that their management efforts are meaningful and appreciated.

Almost all farmers said that the dialogue with the officials has improved considerably since the first years after Sweden joined the EU. Still, the tree rules became a pedagogical challenge for the officials working at the County Administrative Board, given the fact that biological values associated with the trees is also one criterion to be given higher levels of subsidies. The oldest farmer that we have interviewed put it frankly when asked why he claimed the tree-density limits were unnecessary; “I thought that trees are good for the environment?” (R7). Although the critique towards the tree-rules was relatively gentle, some more general concerns regarding the CAP subsidy system was stated by the farmers. A common critique concerned the endless and swift introduced changes within the CAP that does not harmonise with biophysical cycles guiding agricultural practices; “You cannot convert the land or the animals over one night” (R15). There was also critique on how detailed measures for control, and lack thereof, poorly fit farmers’ on-the-ground reality; “Should I clear the ferns (in the pastures) or not, there is no answer?” (R16), and examples of inconsistency in the guidelines provided by the officials providing advisories; “The biologists have their different special interests; a nice tree for the birds, others see the flowers, the third one emphasise this and that” (R17). The farmers who were most upset with the financial situation of farming rather pointed out the responsibility and power of costumers and especially food-industry and super-markets, for not promoting Swedish agricultural products to a degree expected given the public debate involving environmental concerns and discussions on animal health. One farmer (R11) was selling wood pasture meat to customers at the farm and saw marketing possibilities in linking landscape/pasture qualities with quality of the meat.

4. Discussion

4.1. Interviews with farmers and officials

The controversies that followed the tree-density limits in 2007–2009 made it likely to find condemnation among farmers. However, our results show that the farmers were relatively gentle in their critique of the tree density limits. A plausible explanation for this is that all interviewed farmers own and/or also cares for pastures with “special values”, something that gives them greater freedom to keep trees and also higher subsidy revenues than for farmers only managing pastures with “common values”. *Clearing pastures* is a well-integrated farming practise in the area, e.g. for crucial reasons to increase sun-light needed to provide enough grazing, while *keeping* pasture trees have several advantages too. The challenge for the farmers lies in keeping the balance between light and shadow, open and closed space. Still, subsidies from pasture management are crucial for the farm economy (European Commission, 2017), especially for larger farms recently investing in new equipment and stables. Hence, the question of how to handle the tree-rules in order to be granted subsidies is not taken lightly. In summary, farmers are willing to cut in order to get the subsidies, although this is not done unreservedly given the importance of also maintaining the trees, e.g. for aesthetic reasons and as shelter for grazing animals.

The beauty of the pasture trees was commonly referred to by the farmers. Oaks stand out as the favourite pasture tree (cf. Ahnström et al., 2010 for similar findings). Large and old oaks which seem most sought after, compete with the grass about sunlight and historically were hated by small-holders due to the banning of felling oaks in order to ensure timber production for national warship building. This change in opinion about oaks was somewhat difficult

to discern, although the impressiveness of large trees and the resistance that the size in itself poses to cutting probably give us some clues. Another plausible reason is the fact that the trees as an important habitat for red-listed species is something clearly promoted by authorities and this in turn is an important reason for farmers receiving the higher support level. Perhaps are we entering a new era in which oaks on Swedish farmland first and foremost are seen as a habitat, an ecosystem in itself, by all stakeholders, not only ecologists. In that sense one could state that the “simplification of nature” continues. However, oak was only the second most common tree species in the 64 investigated wood pastures (birch was most common), and more than one third of the trees were of other species. Hence, although Jakobsson and Lindborg (2015) showed a clear division between birch and oak dominated pastures, the “odd” trees make up quite a large proportion of the trees in the pastures. Interestingly, these odd trees also contribute substantially to the proportion of large old trees, especially regarding Norway spruce, pine and lime.

Recognition of the beauty and biological values of wood-pastures by neighbours, visitors and officials is an important driving force for farmers’ continuous management of the pastures, creating a natural meeting ground between those actors. Here we find parallels with Burton (2004) notion of “road side farming”, underlining the importance of displaying the competencies and strivings invested in farmland management. More than anything else, farmers view on how and why they manage pastures reminds of large-scale gardening. This result can be interpreted as if the overall changes within CAP have succeeded in directing farmers towards “post-productivist roles” (e.g. when farmers acknowledge biodiversity values of pasture trees) (Burton, 2004). However, it is important to stress that farming identity and lifestyles differs between regions as well as between individual farmers. To notion of a “good-farmer” in the studied area is not only about producing field crops, as in the larger agricultural plains in Sweden, but also includes working with pasture and forest trees in a multifunctional landscape. Although a majority of farmers enjoyed working with pasture trees, it was the small-holders with incomes from off-farm employment were generally the ones most satisfied with their situation as farmers. Subsidies enable them to put efforts in activities that do not necessary pays off financially. One example is the farmer in our sample who pollarded trees “for fun” (in pastures he rented); illustrating the enjoyment associated with managing trees can be a goal in itself. Old and pollarded trees are also acknowledged by the interviewed officials when they decide whether to classify pastures as having “common” or “special values” (cf. Jonegård, 2007; County Administrative Board of Jönköpings län, 2013).

4.2. Management implications

The tree density limits definitely affected farmers view on wood-pastures, as trees were not particularly reflected on by farmers and officials before the introduction of this regulation. We find two main plausible reasons why the trees, and not some other organism, became the measurement of subsidy control. Firstly, trees stand out as the self-evident indicator of land use in a situation where it is administratively important to distinguish between agriculture and forest (cf. Dahlberg, 2015 on the role of categories in policy making). The second reason relates to the fact that trees are easy to count and unlike migrating birds, plant that decay in autumn and cows that are stabled, trees are steadfast.

Such simplified number specifications of nature nevertheless deny the complexity of the agricultural social-ecological system and its values and actors. Sensory experiences and bodily interactions are generally poorly acknowledged within the

dominating environmental and sustainability discourse and policy (cf. Cooke et al., 2016; Chan et al., 2016). To better overcome the divide between those who “talk, write and make decisions from a bird’s-eye view of the world” and “those who deal with the material realm within their reach” (Hägerstrand, 2001), we need to find concepts, mental pictures and relations that literally *make sense* and resonates with everyday experience of the world. On the same note, Chan et al. (2016) emphasizes the need for environmental policy to consider peoples relationship with nature “and how these might be engaged to lessen the negative effects of human lifestyles on ecosystems and enhance positive ones”. Farmers’ recognition of pasture trees as shelter is a striking example of the importance of integrating “on-the-ground” understandings within environment policy and management. It is paradoxically that the role of pastures as habitats for grazing animals was largely overlooked in the set-up of the tree rules, given the attention to biological values within agricultural policy (cf. Saltzman et al., 2011 rhetorical question: “Do cows belong in nature?”).

Our interviews with farmers clearly revealed how visible and graspable trees are in comparison to many other pastures organisms that are inventoried to judge biological status (flora, lichen, insects, birds etc.). A large proportion of odd trees in the pastures also indicate that farmers’ rather selective management (as well as animals selective grazing) favours variation and heterogeneity within the pastures. Hence, we argue that trees in general and wood-pastures in particular are suitable “arenas” for dialogue and knowledge-exchange between environmental management officials and farmers. One such example of wood-pastures as an arena for collaboration comes from the “conservationist entrepreneur” in our study who linked landscape quality of wood-pastures with quality of the meat. The clearance of trees and shrubs was here turned into fertile grounds for cooperation between the farmer, officials and conservation NGO’s. Intensive agriculture is often “a red carpet” for nature conservation groups, especially so in light of the debate regarding climate-gas emission from meat production (Garnett, 2009). Intensive forest production and clear-cutting measures have been source of dispute between forest owning farmers and local conservation NGO’s stressing the high biodiversity of forests in the studied area. Hence, departing from wood pastures, where abandonment of grazing is portrayed as the biggest threat to biodiversity is arguably a promising arena for starting dialogue and cooperation between conservation and production interest. The joint efforts by farmers, conservation NGO’s and authorities concerning wood pasture management in the areas was also a key factor behind the successful application for becoming Biosphere reserve (Olsson, 2012).

Although the tree rules suddenly made farmers and officials thinking in terms of number and distribution of pasture trees, they did not profoundly shift perspectives or practices overnight (cf. Burton et al., 2008). The question on how and why internalization of policy comes about is a vast challenge within (agri-environmental) policy (Burton, 2004; Stobbelaar et al., 2009). The resistance to change is often seen as a problem for implementing environmental policies. However, if we consider that norms and values imbedded in state policy and market signals can and have changed dramatically, there are also reasons to acknowledge peoples reluctance to change. A couple of decades ago, farmers in the area were encouraged either to plant spruce in pastures or to fertilise in order to maximise income. Fortunately, far from all farmers admitted to the policy signals at that time, and if such measures were used today, farmers would even lose their right to subsidy support. Much of the frustration expressed by farmers does not lie in policy rules, categories and boundary making, but rather on how the policy signals shifts at a pace hard to cope with, especially when working with long-lived trees. In addition, the critique of the tree-

density limits posed by Swedish authorities partly reflects the set-up of the rule, as it risks undermining the values attached to tree-rich farmlands if farmers cut the wrong way/too much. However, and perhaps even more importantly, the critique also reflects the risk of losing trust among farmers (Ahnström et al., 2010).

5. Conclusions

This paper has assessed the effect of the tree-density limits that was initiated for wood-pastures, focusing on the farmers’ perspective on management and CAP subsidies. The farmers were willing to cut trees in order to receive subsidies, however not unreservedly. The CAP revenues are important for farm economy, especially for large dairy farms, where farmers with little or no chance to earn off-farm income due to high-workload taking care of a large number of animals. Still, the wood-pastures are not cleared of trees in order for farmers to be on the safe side. If hesitant, the farmers we interviewed would rather take the trees out of the application for subsidies, than out of the pastures.

We have portrayed the farmers as large-scale gardeners given their outspoken joy and proud in managing the wood-pastures. Continuous removal of trees and shrubs from pastures is a self-evident measure for securing enough fodder, while at the same time keeping the landscape (semi-)open for aesthetic reasons and for the sake of shelter for grazing animals. We suggest that trees in general and wood-pastures in particular are good starting points for a relational endeavour, a concrete meeting-place, or a “boundary-object” (cf. Steger et al., 2018), to begin collaboration between production and conservation perspectives in agriculture. The tendency to simplify nature in order to grasp and control seems difficult to escape given the compartmentalised way to govern environmental management. Our results suggests that if officials are forced to choose one organism to guide their management, trees, *that are all around us*, has great potential to work as a common ground from which future landscapes can be negotiated and more inclusively woven.

Acknowledgements

This project was financially supported by the Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (FORMAS; 2011-977) and Carl Mannerfeldts Foundation.

Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.jenvman.2018.02.004>.

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